

AT 70

Backward I look from summit of the years
 At the rugged dusty way of toil and grime,
 From level distant plain of boyhood's prime,
 —Way strewn with hopes, with triumphs and with tears:
 And I am optimist, like him who hears
 Clear voices call from higher peaks of Time,
 Across the cloudy glens, and turns to climb
 What yet remains, with more of hopes than fears.
 I'm but a grain of sand upon Time's shore,
 Driven by wind and waters evermore!
 And *millions* make but shifting dunes and bars!
 Yet I can read in every grassy sod
 Divine great thoughts that sweep beyond the stars
 And make me one with Him who is our God!

BOTANY. *New species of plants from Salvador. IV.* PAUL C. STANDLEY, U. S. National Museum.¹

***Abutilon vulcanicola* Standl., sp. nov.**

Shrub, 1.5–5 m. high, copiously branched, the young branches densely stellate-tomentose with yellowish, fine and coarse hairs; stipules caducous; petioles 2.5–9 cm. long; leaf blades orbicular-cordate, 10–18 cm. long and wide, abruptly acuminate, deeply cordate at base, entire or sometimes shallowly trilobate near the apex, green above, sparsely and very minutely stellate-pubescent or glabrate, paler beneath, densely and minutely stellate-pubescent; pedicels axillary, solitary, mostly 10–12 cm. long, jointed near the apex; calyx tube broadly campanulate, 1.5 cm. long, densely fulvous-tomentose, the lobes oblong-triangular, acuminate or attenuate, equaling the tube, reflexed, stellate-tomentose outside, densely whitish-sericeous within; petals orange, 4.5–6 cm. long, broadly obovate, recurved, coarsely stellate-pubescent outside; stamen tube 2.5 cm. long, glabrous above, enlarged and stellate-hirsute at base, the stamens very numerous; styles stellate-pubescent; fruit about 3 cm. in diameter, the carpels very numerous, rounded at apex, stellate-hirsute.

Type in the U. S. National Herbarium, no. 1,137,315, collected on the Volcán de San Vicente, Salvador, altitude about 1500 meters, March, 1922, by Paul C. Standley (no. 21514). Also collected on the same volcano, but on the opposite side, in March, 1922, by Dr. Salvador Calderón (no. 344).

A showy and handsome plant, quite unlike any species of *Abutilon* previously reported from Central America. The vernacular name is *malva*.

***Hibiscus longipes* Standl., sp. nov.**

Plants apparently herbaceous, the branches covered with a dense stellate pubescence consisting of coarse spreading yellowish hairs and of finer appressed white ones; stipules subulate, 4–6 mm. long; petioles slender, 2.5–5

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cm. long, densely and coarsely stellate-pubescent; leaf blades broadly ovate to rounded-ovate, 6-10 cm. long, 4-6 cm. wide, acute or obtuse at apex, cordate to truncate at base, shallowly crenate-dentate, thin, stellate-pubescent and rough on both surfaces, or glabrate above, the pubescence consisting of coarse 3-rayed hairs and of numerous much smaller and finer ones; pedicels axillary, mostly 5-9 cm. long; bractlets 8 or 10, slightly or much shorter than the calyx, oblanceolate or linear-oblanceolate, 2.5-4 mm. wide, acute, stellate-pubescent; calyx 2-2.5 cm. long, finely or coarsely stellate-pubescent, the lobes longer than the tube, lance-triangular, attenuate; corolla purplish, about 4 cm. long, the petals sparsely stellate-pubescent outside; capsule about 1.5 cm. long, very minutely stellate-pubescent; seeds densely covered on all sides with long soft silky hairs.

Type in the U. S. National Herbarium, no. 1,152,605, collected in the garden at the Finca San Nicolás, Salvador, in 1923 by Félix Choussy (no. 5). The following additional specimens have been examined:

SALVADOR: San Salvador, *Calderón* 820.

HONDURAS: Río Chamelecón, Departamento de Santa Bárbara, *Thieme* 5152.

Related to *H. lavateroides* Moric. (as which the Honduran collection was distributed), but distinguished by the much larger flowers. *Hibiscus lavateroides* is known at present only from eastern Mexico.

Malache fonsecana Standl., sp. nov.

Shrub, 1-2 m. high, the branchlets densely viscid-pubescent; stipules linear-subulate, 2.5-3.5 mm. long; petioles 1-2 cm. long, viscid-pubescent; leaf blades triangular-ovate or oblong-ovate, 3-5 cm. long, 1.5-2.5 cm. wide, gradually narrowed toward the attenuate apex, cordate at base, irregularly and shallowly crenate, glandular-viscid on both surfaces, green above and densely stellate-pubescent, pale beneath and stellate-tomentose; pedicels mostly axillary and solitary, 3-4 cm. long or longer, slender, viscid-pilose, jointed near the apex; bractlets 8-10, linear, green, 10-14 mm. long, densely glandular-pubescent; calyx 6 mm. long, scarious but green-nerved, viscid-setulose, the lobes ovate, acute, about equaling the tube; corolla densely pubescent outside; fruit 6 mm. in diameter, glabrous, dry, the carpels rounded at the apex, unarmed, obscurely nerved.

Type in the U. S. National Herbarium, no. 1,136,506, collected in dry thicket near La Unión, Salvador, on the Gulf of Fonseca, February, 1922, by Paul C. Standley (no. 20677).

Ayenia micrantha Standl., sp. nov.

Young branches slender, densely and minutely brownish-tomentose; petioles stout, 8 mm. long or less, nearly obsolete in the upper leaves, minutely tomentose; leaf blades ovate, 3-7 cm. long, 2-4 cm. wide, acute or acuminate, rounded or subcordate at base, coarsely crenate-serrate, above green and furnished with very minute scattered stellate hairs, beneath paler, finely and rather densely stellate-pubescent, 5 or 7-nerved at base; flowers in axillary fasciculate umbels, the peduncles 2-3 mm. long (sometimes up to 14 mm. in fruit), the pedicels 2-3 mm. long or in fruit often 8 mm. long; calyx minutely stellate-pubescent outside, the lobes ovate, 2 mm. long, acuminate, brown-purple and glabrous within; fruit (including spines) 6 mm. in diameter, sessile or nearly so, the spines very numerous and crowded, stout, scaberulous or glabrate.

Type in the U. S. National Herbarium, no. 1,151,926, collected near Chalchuapa, Salvador, in 1922 by Dr. Salvador Chalderón (no. 961).

Related to *A. jaliscana* S. Wats., a Mexican species, which is distinguished by its larger flowers, copious and longer pubescence, and the few short tubercles of the fruit.

***Parsonsia salvadorensis* Standl., sp. nov.**

Plants erect, suffrutescent, 30–60 cm. high, sparsely branched, the stems densely covered with short stiff spreading hairs; petioles 3–9 mm. long, pubescent like the stems; leaf blades ovate-oblong or ovate, 2.5–5 cm. long, 1–2 cm. wide, acute or acutish, acute at base, thick, green on the upper surface and densely scabrous, somewhat paler beneath, scabro-hirtellous, especially along the nerves; flowers alternate, solitary in the leaf axils, short-pedunculate, the pedicel 5–6 mm. long, hirtellous, bearing at the middle 2 minute green bractlets; calyx stout, 28 mm. long, 5 mm. in diameter, bright red, densely and minutely hirtellous, the hairs somewhat thickened toward the base, the spur very short and broadly rounded, the tube glabrous within, not crested; calyx lobes all alike or nearly so, scarcely 2 mm. long, broadly ovate, acutish, ciliate, the cilia thickened at base, the appendages rounded-ovate, longer than the calyx lobes, greenish, ciliate with bulbous-based hairs; stamens 11, inserted about 23 mm. above the base of the tube; disk consisting of a short thick rounded dorsal projection; petals 2, bright red, clawed, the blades about 3 mm. long; capsule broadly oblong, glabrous, compressed, 7 mm. long, obtuse; seeds about 19, 2 mm. in diameter.

Type in the U. S. National Herbarium, no. 1,136,046, collected on edge of forest, near Finca Colima, Sierra de Apaneca, Departamento de Ahuachapán, Salvador, January, 1922, by Paul C. Standley (no. 20190).

***Eugenia alfaroana* Standl., sp. nov.**

Shrub, 1–5 m. high, very densely branched, the branchlets very slender, thinly pilose-sericeous; petioles 2–4 mm. long, appressed-pilose; leaf blades linear or nearly so, often slightly broadened near the base, 5–6 cm. long, 1.5–4 mm. wide, acute at base, acute at apex and aristate-mucronate (bristle 1.5 mm. long), thin, when young thinly pilose-sericeous with whitish hairs, soon glabrate, paler beneath, finely glandular-punctate, the margins thickened and often revolute; pedicels axillary, solitary, 1.5–2 cm. long, very slender, appressed-pilosulous or glabrate; bractlets 2 at the base of the calyx, filiform-subulate, 2–3 mm. long; calyx tube 2 mm. long, densely white-tomentose, the lobes ovate, subulate-acuminate, 2.5–3 mm. long, tomentose or glabrate; petals broad, white, 3 mm. long, ciliolate, copiously gland-dotted; fruit purple-black, 6–7 mm. in diameter, glabrate; seed 1, about 6 mm. in diameter.

Type in the U. S. National Herbarium, no. 1,135,917, collected in open place at edge of forest on the lower slopes of the Sierra de Apaneca, Finca Colima, Departamento de Ahuachapán, January, 1922, by Paul C. Standley (no. 20053). The following additional collections are referable here:

SALVADOR: Departamento de Ahuachapán, *Padilla* 211, 330. Sonsonate, planted in a finca, *Standley* 22310.

Eugenia alfaroana is named in honor of Don Carlos Alfaro, in whose company the type specimen was collected, and to whom I am indebted for several days pleasantly and profitably spent at the Finca Colima, one of the most beautiful regions of Salvador and one of the most interesting botanically.

The plant is a relative of *Eugenia linearis* Rich. and *E. pomifera* (Aubl.) Urban. It is a handsome plant and is frequently cultivated in western Salvador. At Finca Colima the vernacular name was given as *pinito cimarrón* and at Sonsonate as *pino real*. Dr. Padilla reports the names as *ciprés* and *pino*.

***Psidium rensonianum* Standl., sp. nov.**

Branches grayish, thickened and somewhat compressed at the nodes, when young very closely sericeous, soon glabrate; petioles stout, 5–8 mm. long; leaf blades elliptic to oblong or obovate, 5–10.5 cm. long, 2.5–5.5 cm. wide, obtuse or rounded at apex, acute at base, thick, green above and glabrous, the venation inconspicuous, beneath pale, very closely and finely sericeous (pubescence perceptible only under a strong lens) or in age glabrate, finely punctate, the costa prominent, the lateral nerves about 9 pairs, slender and inconspicuous, remote, laxly anastomosing near the margin; inflorescences axillary, 3–5-flowered, short-pedunculate, finely sericeous or glabrate, the pedicels stout, 3–6 mm. long; ovary minutely sericeous, the calyx densely brownish-sericeous, splitting into 5 irregular rounded lobes about 3 mm. long, these persistent upon the fruit; fruit glabrate, subglobose, 10–12 mm. in diameter, 1-seeded.

Type in the U. S. National Herbarium, no. 1,151,795, collected at San Salvador, Salvador, July, 1922, by Dr. Salvador Calderón (no. 838). *Renson* 339 from Salvador represents the same species.

Psidium rensonianum is probably related to *P. sartorianum* (Berg) Niedenzu, which, also, occurs in Salvador, but that species differs in its small leaves and lack of pubescence. The vernacular name of *P. rensonianum* is given as *guacoco*.

***Jacquinia longifolia* Standl., sp. nov.**

Shrub or small tree, 2–5 m. high, the branches slender, glabrous; leaves mostly alternate, but the uppermost often pseudo-verticillate, the petioles 3–5 mm. long, compressed, glabrous or minutely hirtellous, the blades narrowly oblanceolate-oblong, 5–7 cm. long, 8–17 mm. wide, obtuse or rounded at apex, not mucronate, gradually narrowed to the base, comparatively thin, green on both surfaces, glabrous or sometimes minutely hirtellous above along the costa, 3-nerved, the secondary nerves inconspicuous and laxly reticulate; pedicels solitary or fasciculate in the leaf axils, slender, thickened at apex, 4–5 mm. long (in fruit up to 8 mm.), glabrous; calyx 3 mm. long, glabrous, the lobes orbicular, obscurely crenulate and obsoletely ciliolate; corolla yellow, 7 mm. broad, the tube campanulate, 3 mm. long, the lobes suborbicular, two-thirds as long as the tube; staminodia rounded-oval, half as long as the corolla lobes; anthers cordiform, shorter than the appendages, obtuse, not emarginate, the filaments narrowly triangular; fruit ellipsoid, 1–1.5 cm. long, smooth, mucronate at apex, few-seeded.

Type in the U. S. National Herbarium, no. 1,136,970, collected in thicket on rocky stream bank at San Vicente, Salvador, March, 1922, by Paul C. Standley (no. 21159). *Standley* 21743, from the same locality, is also referable to this species.

Jacquinia longifolia belongs to the small group of species whose leaves are not pungent-mucronate at apex. It is not closely related to any of those previously described, all of which are natives of South America and the West Indies.

***Ipomoea calderoni* Standl., sp. nov.**

A herbaceous vine, the stems slender, glabrous, bearing a few scattered compressed winglike tubercles; petioles slender, 11–14 cm. long, glabrous; leaf blades ovate-cordate to rounded-cordate, 11–15 cm. long, 7.5–11 cm. wide, acute and cuspidate-acuminate, with an acumen about 3 cm. long, deeply cordate at base, the sinus open, thin, glabrous throughout; peduncles axillary, solitary, recurved, 2–4-flowered, glabrous or bearing a few fleshy spinelike tubercles, the pedicels in anthesis about 2 cm. long, in fruit up to 5.5 cm. and much thickened (5–6 mm. thick beneath the calyx); sepals about 12 mm. long, ovate, coriaceous, glabrous, with thin scarious margins, cuspidate-acuminate at apex, the cusp greenish; corolla purple, slender funnel-form, the tube about 5 cm. long and nearly 2 mm. in diameter, the throat 2.5 cm. long, the limb about 3 cm. long, angulate; capsule 4-celled, oblong-ovoid, about 2.5 cm. long; seeds 4, glabrous, brown, 12 mm. long.

Type in the U. S. National Herbarium, no. 1,151,843, collected at San Salvador, Salvador, in 1922 by Dr. Salvador Calderón (no. 883).

***Operculina hirsuta* Standl., sp. nov.**

A herbaceous vine, the stems scandent, sparsely long-hirsute; petioles slender, 6–9 cm. long, sparsely long-hirsute or glabrous; leaf blades rounded-cordate or broadly deltoid-cordate, 9–13 cm. long, 7.5–11 cm. wide, acute or acuminate, usually somewhat abruptly so, shallowly cordate at base, with a broad open sinus, the basal lobes broadly rounded, thin, glabrous; pedicels axillary, solitary 1-flowered, 3.5–4.5 cm. long, thick and stout (5 mm. in diameter below the calyx), glabrous, reflexed in fruit; sepals 2.5–3 cm. long, oblong-ovate, obtuse or rounded at apex, glabrous, green but with thin scarious margins; corolla pink, funnel form, 10 cm. long, the tube just above the calyx 10–12 mm. in diameter; capsule 2.5 cm. long, glabrous, 3-seeded; seeds strongly compressed, 12 mm. long, densely appressed-pilose, the margins thickly fringed with white silky hairs 1 cm. long or more.

Type in the U. S. National Herbarium, no. 1,152,316, collected in garden at San Salvador, Salvador, in 1922 by Dr. Salvador Calderón (no. 1338).

Easily recognized among the related species by the hirsute pubescence of the stems.

***Cordia salvadorensis* Standl., sp. nov.**

Young branchlets sparsely hirtellous with spreading or partly appressed hairs; petioles slender, 1.5–3.5 cm. long, glabrate; leaf blades elliptic or oblong-elliptic, mostly 15–20 cm. long and 8–9.5 cm. wide, abruptly acute or acuminate, obtuse or acute at base, thin, deep green, remotely and shallowly sinuate-serrate above the middle or occasionally subentire, sparsely scaberulous on the upper surface, beneath scaberulous and along the nerves short-pilose, densely barbate in the axils of the nerves; flowers in lax, terminal or pseudo-axillary cymes, these few- or many-flowered, about 5 cm. long or in fruit as much as 15 cm. long, the branches scaberulous and hirtellous; flowers sessile or nearly so; calyx nearly 4 mm. long, scaberulous, finely multistriate, the 5 teeth very short, broadly triangular, obtuse; corolla tube varying from shorter than the calyx to slightly exceeding it, the lobes oblong, obtuse, glabrous, half as long as the calyx; fruit subglobose, 6 mm. long.

Type in the U. S. National Herbarium, no. 1,152,097, collected at San Salvador, Salvador, August, 1922, by Dr. Salvador Calderón (no. 1126).

Citharexylum macrocarpum Standl., sp. nov.

Tree of medium size, with rounded crown, the branches grayish, the young branchlets minutely whitish-puberulent; leaves opposite, the petioles 6–18 mm. long, puberulent, the blades elliptic, obovate-elliptic, or rhombic-obovate, 5–7.5 cm. long, 2.5–4.5 cm. wide, rounded, obtuse, or abruptly acute at apex, cuneately acute at base, green above, glabrous or puberulent along the costa, beneath paler, hirtellous, especially along the nerves, or soon glabrate, the blades rather definitely triplinerved, the secondary nerves prominulous and reticulate; flowers in slender few-flowered axillary spikes 1.5–2 cm. long, the rachis minutely puberulent; calyx in fruit 4 mm. long, glabrous, 5-costate, very shallowly 5-dentate, the teeth broad, obscurely mucronate; fruit apparently dry, 13–17 mm. long, 6 mm. broad, glabrous, somewhat compressed, oblong, soon splitting into 2 strongly compressed stones, each of these 2-called and 2-seeded.

Type in the U. S. National Herbarium, no. 1,152,213, collected at La Cebadilla, Departamento de San Salvador, Salvador, in 1922 by Dr. Salvador Calderón (no. 1234). Here is to be referred also *Tonduz* 13792, collected in forests of the hills of Nicoya, Costa Rica, in December, 1899.

Although here referred to the genus *Citharexylum*, it is almost certain that this tree will be found to represent the type of a new genus. Unfortunately the flowers are lacking, and until they have been collected its status must remain doubtful. The fruit characters agree better with those of *Citharexylum* than those of any other genus of the Verbenaceae, but the fruit appears to be dry, and if such is the case, the tree will have to be placed elsewhere. It is probable that the flowers will be found to afford important diagnostic characters.

Physalis hylophila Standl., sp. nov.

Herb, 30–90 cm. high, much branched, the stems copiously viscid-villous with white hairs; petioles slender, 6–18 mm. long, viscid-villous; leaf blades ovate or ovate-elliptic, 2–4 cm. long, 1–2.5 cm. wide, abruptly acuminate, obliquely rounded at base, thin, entire, sparsely viscid-villous on the upper surface with short whitish hairs, beneath more densely villous with longer, mostly gland-tipped hairs; pedicels 3–5 mm. long, recurved in fruit, slender; calyx 3–4.5 mm. long, densely villous with short viscid hairs, the teeth short, broadly ovate, obtuse or acutish; corolla 6–7 mm. long, pale greenish yellow, the lobes ciliate; fruiting calyx about 15 mm. long and 12 mm. in diameter, rather sparsely glandular-pubescent, obtusely 5-angulate, depressed at base, reticulate-veined, the teeth about 2 mm. long.

Type in the U. S. National Herbarium, no. 1,136,789, collected on a wooded slope along the shore of the Laguna de Maquigüe, Departamento de La Unión, Salvador, altitude about 60 meters, February 18, 1922, by Paul C. Standley (no. 20971).

The Central American species of *Physalis* have not been studied critically in recent years, but the present plant does not appear to be referable to any of the species described from that region or from Mexico. The vernacular name is *bombita*.

Tabebuia calderoni Standl., sp. nov.

A large shrub with thick trunk, the branchlets glabrate; petioles slender, terete, glabrous, 3–5 cm. long; leaflets 3, the petiolule of the terminal one about 2 cm. long, those of the lateral leaflets shorter, the blades oblong or ovate-oblong, 9–12 cm. long, 3–5.5 cm. wide, shortly obtuse-acuminate, obtuse or rounded at base, thick, lustrous above, glabrous, the venation elevated, beneath brownish (when dry), glabrous; flowers in terminal paniculate racemes, these about 10 cm. long, many-flowered, the rachis densely and minutely puberulent, the pedicels stout, 3–4 mm. long; bracts large and conspicuous but caducous; calyx campanulate, 5–6 mm. long, very shallowly 3-lobate, densely and very minutely puberulent; corolla yellow, about 4.5 cm. long, the limb 4 cm. broad, glabrous within, minutely lepidote outside, the lobes rounded-ovate.

Type in the U. S. National Herbarium, no. 1,165,688, collected at Acajutla, Salvador, July 13, 1923, by Dr. Salvador Calderón (no. 1666).

A very distinct species because of its combination of trifoliolate leaves and yellow flowers.

Aphelandra padillana Standl., sp. nov.

Shrub, 1–2.5 m. high, sparsely branched, the stems pruinose-puberulent and when young sparsely strigillose; leaves petiolate, the blades oblong-lanceolate or oblong-ovate, 15–25 cm. long, 4–9 cm. wide, acuminate, abruptly acuminate to the base and long-decurrent upon the petiole, thin, bright green above, bearing a few scattered short hairs, beneath paler, pruinose-puberulent; spikes stout, terminal and axillary, 12–30 cm. long, very dense, the rachis densely glandular-pilose; bracts closely imbricate, ovate or broadly ovate, 2–3 cm. long, obtuse or rounded at apex or the uppermost acutish, entire, green or purplish, densely glandular-pilose with short whitish hairs; flowers sessile, the bractlets linear-subulate, equaling the calyx, glandular-pilose; calyx lobes linear-lanceolate, 1.5 cm. long, long-attenuate, finely striate-nerved, finely glandular-pilose; corolla bright red, 6.5–7.5 cm. long, finely glandular-pilose outside, the tube nearly 5 cm. long, 7 mm. wide in the throat, the upper lip obovate, nearly 3 cm. long, obtuse or rounded at apex, the lower lip 3-parted, the segments lance-oblong, acute or obtuse; stamens exerted, the filaments glabrous or sparsely pilose, the anthers 4 mm. long; capsule 2 cm. long, elliptic-oblong, acutish, densely and finely pubescent.

Type in the U. S. National Herbarium, no. 1,135,839, collected along a stream in the mountains near Ahuachapán, Salvador, altitude about 1000 meters, January, 1922, by Paul C. Standley (no. 19972). The following additional specimens belong here:

SALVADOR: Ahuachapán, *Standley* 19771. Volcán de San Vicente, alt. 1500 meters, *Standley* 21512. Comasagua, *Calderón* 1364. Finca Chilata, Departamento de Sonsonate, *Standley* 19315. San Vicente, alt. 350 meters, *Standley* 21680. Santa Tecla, *Calderón* 1422.

Aphelandra padillana is named for Dr. Sisto Alberto Padilla of Ahuachapán, a keen student of the Salvadorean flora, to whom the writer is indebted for many favors during his visit to western Salvador in January, 1922. Dr. Padilla has published various articles upon the natural history of Salvador and other parts of Central America, and has forwarded to the National Museum a large collection of plants made by himself in the Department of Ahuachapán.

The species here described is a very showy plant that is common in the mountains of Salvador, but I have seen no specimens from other parts of Central America. It is a form well worthy of cultivation because of its handsome red flowers and attractive leaves. The only vernacular name obtained for it is *hierba de cadejo*, which was given me at Ahuachapán.

***Justicia soliana* Standl., sp. nov.**

Slender shrub or herb, 1–2 m. high, much branched, the stems somewhat puberulent when young but soon glabrate; leaves slender-petiolate, the blades oblong-lanceolate to ovate, mostly 9–18 cm. long and 3–9 cm. wide, long-acuminate, abruptly acuminate at base and long-decurrent upon the petiole, thin, deep green above, glabrous, beneath paler, somewhat puberulent along the nerves but elsewhere glabrous, furnished on both surfaces with very numerous short raphids; inflorescence of numerous small thyriform panicles, these terminal and in the upper leaf axils, forming an elongate thyriform leafy-bracted panicle 10–30 cm. long, its rachis finely puberulent; bracts linear or linear-oblongate, 12–25 mm. long, green, obtuse or acute, minutely puberulent and near the apex usually, finely glandular-pilose, the bractlets similar but shorter and narrower; flowers sessile or nearly so; calyx segments linear-attenuate, subequal, 4–5 mm. long, finely puberulent; corolla bright red, 2.5–3 cm. long, densely short-pilose outside and with numerous short gland-tipped hairs, the tube straight, much longer than the lips, 4 mm. broad in the throat, contracted above the ovary, the lips subequal, suberect, the posterior one obscurely bidentate, the anterior one very shallowly 3-dentate; anthers unequally inserted, mucronate at base; capsule about 18 mm. long, clavate, glabrous; seeds 4, compressed, suborbicular, 3 mm. in diameter, muricate.

Type in the U. S. National Herbarium, no. 1,135,238, collected on a rocky stream bank at Finca Chilata, Departamento de Sonsonate, Salvador, December 26, 1922, by Paul C. Standley (no. 19325). The following additional specimens have been examined:

SALVADOR: Ahuachapán, alt. 1000 m., *Standley* 20009, 19777. Departamento de Ahuachapán, *Padilla* 13. Comasagua, *Calderón* 1408. San Miguel, alt. 110 m., *Standley* 21149. Finca Chilata, *Standley* 19313. Finca Colima, Sierra de Apaneca, Departamento de Ahuachapán, *Standley* 20056.

Justicia soliana is a handsome plant, very common in the mountain regions of Salvador, but I have seen no specimens from other parts of Central America. It is named for Sr. Don Salvador Sol, Minister of Salvador in the United States, to whom I am indebted for a pleasant visit to Finca Chilata, where the type specimen was collected.

***Bouvardia pallida* Standl., sp. nov.**

Slender shrub, 1–1.5 m. high, the branches grayish, the young branchlets minutely puberulent; stipule sheath 2–3 mm. long, minutely puberulent, the free portion triangular, subulate-acuminate, glandular-laciniate; leaves mostly ternate, the petioles 2–3 mm. long, the blades lanceolate to narrowly ovate, 2.5–4.5 cm. long, 1–2.3 cm. wide, long-acuminate, acute or obtuse at base, thin, sparsely scaberulous or glabrate above, beneath paler, puberulent along the nerves; inflorescences terminal, cymose-corymbose, 5–12 cm. broad, many-flowered, dense, the bracts mostly large and leaflike, the pedicels slender, 2–4 mm. long, puberulent; hypanthium hemispheric, puberulent, the

calyx lobes oblong-linear, 2-3 mm. long; corolla lavender, glabrous, the tube stout, 5 mm. long, broadened upward, the lobes ovate-oblong, 3 mm. long, obtuse, glabrous within; filaments exerted; capsule subglobose, 3 mm. broad; seeds broadly winged.

Type in the U. S. National Herbarium, no. 1, 138,686, collected in a dry thicket on the lower slopes of the Volcán de San Salvador, above Santa Tecla, Salvador, April 7, 1922, by Paul C. Standley (no. 22977).

Related to *B. bouvardioides* (Seem.) Standl., a Mexican species, in which the corolla is twice as large and red.

***Stylosiphonia salvadorensis* Standl., sp. nov.**

Slender shrub, 2.5-3.5 m. high, the branches terete, brownish, the young branchlets glabrous or sparsely pilose; stipules interpetiolar, 1.5-2 mm. long, deltoid, subulate-acuminate, persistent; leaves opposite, the petioles slender, 2-4 mm. long, sparsely pilose or glabrous, the blades lance-oblong, 3.5-6.5 cm. long, 1-2 cm. wide, rather abruptly acuminate, acute to attenuate at base, thin, bright green above, very sparsely pilose or glabrous, beneath paler, when young thinly floccose-tomentose, in age sparsely pilose, ciliate; flowers in few-flowered axillary cymes, the branches glabrous or nearly so, the peduncles about 5 mm. long, the pedicels slender, 5-8 mm. long, recurved in fruit; bracts linear, about 3 mm. long; calyx lobes linear-subulate, 2.5-3 mm. long; capsule ovoid, 5-6 mm. long, glabrous, costate, loculicidally dehiscent to the middle of the valves, the septum also cleft in dehiscence; seeds minute, brown angulate.

Type in the U. S. National Herbarium, no. 1,137,349, collected in moist forest on the Volcán de San Vicente, Salvador, altitude 1500 meters, March 8, 1922, by Paul C. Standley (no. 21559).

The flowers are not known, and the generic position of the plant is consequently doubtful, but it seems to agree better in fruiting characters with *Stylosiphonia* than with any other known genus of the Rubiaceae.

***Verbesina salvadorensis* Blake, sp. nov.**

Stem obscurely pubescent; leaves alternate, obovate, acuminate, long-cuneate at base, very short-petioled, about 20 cm. long, 5 cm. wide, serrulate, strigillose but smooth to the touch above, sparsely pilosulous beneath chiefly along the nerves; heads medium-sized, radiate, white, in terminal flattish cymose panicles.

Herbaceous, at least above, probable tall and simple below the inflorescence; stem stout, subangulate, wingless, purplish-brown, sparsely short-pilose with chiefly appressed or ascending hairs, glabrescent except toward apex; leaves (only the upper seen) alternate, 1 to 3 cm. apart; petioles broad, naked, strigose, not auriculate or decurrent, 3 mm. long; blades obovate or oblong-obovate, 12.5 to 20 cm. long, 3 to 5 cm. wide, acuminate, gradually or somewhat abruptly narrowed into a long cuneate base, serrulate with low blunt teeth above the entire cuneate lower portion, papery, above deep green, finely lepidote-strigillose (the lepidote hair-bases persistent), beneath somewhat yellowish green, sparsely pilosulous on the veins and veinlets and sometimes slightly so on the surface, feather-veined, the costa whitish and prominent beneath, the chief lateral veins (above the narrowed basal part of the blade) about 10 pairs, whitish, prominulous beneath, the veinlets obscure; panicle flattish, pilose with appressed or loose hairs, about 22 cm. wide, equaled by the

upper leaves, composed of about 6 partial panicles terminating the stem and branches, these 5 to 10 cm. wide, many-headed; bracts linear or spatulate, mostly 2 cm. long or less; pedicels 2 to 10 mm. long; heads about 12 mm. wide; disk campanulate, 8 to 10 mm. high, 4 to 5 mm. thick; involucre about 3-seriate, graduate, 5 to 6 mm. high, the outermost phyllaries small, linear-lanceolate, with very short dark acutish tips, the others oblong or oblong-obovate, stramineous, acute or apiculate, ciliate, carinate and nearly glabrous dorsally, with subscarios appressed tips; rays 5, pistillate, white, the tube pilose, 2 mm. long, the lamina elliptic or oval, 2 or 3-toothed, 6 to 9-nerved, sparsely pilose dorsally, 4.5 mm. long, 2.2 mm. wide; disk corollas about 23, white, erect-pilose at base of throat, otherwise glabrous, 4.5 mm. long (tube 1 mm., throat funnellform, 3 mm., teeth ovate, 0.5 mm. long); pales narrow, acute or apiculate, ciliate above, 7 mm. long; achenes (immature) narrowly cuneate-obovate, about 4 mm. long, 1.5 mm. wide, very narrowly 1 or 2-winged, the wings ciliolate, decurrent on the base of the awns; awns 2, somewhat, unequal, 2 to 2.8 mm. long.

Type in the U. S. National Herbarium, no. 1,152,183, collected at La Cebadilla, Department of San Salvador, Salvador, in 1922, by Dr. Salvador Calderón (no. 1206).

A species of the Section *Ochraetinia*, nearest the Guatemalan *V. punctata* Rob. & Greenm., which has the stems winged above with herbaceous wings up to 3 mm. wide.

ENTOMOLOGY.—*The North American bird parasites of the genus Protocalliphora (Calliphoridae, Diptera).*¹ RAYMOND C. SHANNON and IRENE D. DOBROSKY. (Communicated by S. A. ROHWER.)

This paper deals primarily with the systematic treatment of the North American species of *Protocalliphora*, a genus of flies which, in the larval stage, parasitizes nestling birds. Swallows, crows, sparrows, larks, robins, and allied passerine birds are the usual hosts of these blood-feeding larvae, but the host record of an owl is also included below. Many nestlings are killed annually by these parasites. An extended biological account of the group will be given in a subsequent paper by the junior author.

Our native species have always been confused with the European forms. They may, however, be immediately separated therefrom by the absence of hairs on the post alar declivity and on the tympanic membrane (located between the inner margin of the lower squama and lower squama of post alar declivity).

Two names have been applied to American material: *Protocalliphora (Calliphora) splendida* Macquart, described 1845, has rarely

¹ We desire to express our appreciation to Drs. J. M. Aldrich, O. A. Johannsen and J. Bequaert for suggestions and material. For bibliography see Bezzi, *Parasitology* 14: 29-46. 1922.